

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled).
2. (Canceled).
3. (Canceled).
4. (Canceled).
5. (Currently Amended) A spread spectrum communication system comprising:
a receiving unit configured to receive a communication quality of a communication channel between an equipment and a counterpart equipment;
a transmitting unit configured to transmit data to the counterpart equipment; and
a control unit configured to control a transmission band width and a transmission power of a counterpart equipment depending upon said communication quality,
wherein when said communication quality is not degraded below a predetermined level and the transmission power is not minimum, the transmission power is lowered, and
~~wherein, when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction~~
code said control unit comprises:
a reception control arithmetic portion configured to receive a reception signal error ratio and to determine and output a receiver gain;
a reception gain distribution control portion configured to receive the receiver gain output by the reception control arithmetic portion and to determine and output a reception amplifier control signal to an RF amplifier of the receiving unit and a reception clock control signal to a first clock generator of the receiving unit that is used to generate a first pseudo-noise signal;

a transmission control arithmetic portion configured to receive transmission chip rate information and to determine and output a transmission gain; and

a transmission gain distribution control portion configured to receive the transmission gain output by the transmission control arithmetic portion and to determine and output a transmission amplifier control signal to a power amplifying portion of the transmitting unit and a transmission clock control signal to a second clock generator of the transmitting unit that is used to generate a second pseudo-noise signal.

6. (Canceled).

7. (Currently Amended) A spread spectrum communication system comprising:
a receiving unit configured to receive a communication quality of a communication channel between an equipment and a counterpart equipment;

a transmitting unit configured to transmit data to the counterpart equipment; and

a control unit configured to control a transmission band width and a transmission power of a counterpart equipment depending upon said communication quality,

wherein when said communication quality is not degraded below a predetermined level and the transmission power is minimum, and when a vacant band is present in a narrower band than a currently used frequency band, the frequency band is varied to narrower band, and

~~wherein, when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code~~ said control unit comprises:

a reception control arithmetic portion configured to receive a reception signal error ratio and to determine and output a receiver gain;

a reception gain distribution control portion configured to receive the receiver gain output by the reception control arithmetic portion and to determine and output a reception amplifier control signal to an RF amplifier of the receiving unit and a reception clock control signal to a first clock generator of the receiving unit that is used to generate a first pseudo-noise signal;

a transmission control arithmetic portion configured to receive transmission chip rate information and to determine and output a transmission gain; and

a transmission gain distribution control portion configured to receive the transmission gain output by the transmission control arithmetic portion and to determine and output a transmission amplifier control signal to a power amplifying portion of the transmitting unit and a transmission clock control signal to a second clock generator of the transmitting unit that is used to generate a second pseudo-noise signal.

8. (Currently Amended) A spread spectrum communication system comprising:
a receiving unit configured to receive a communication quality of a communication channel between an equipment and a counterpart equipment;

a transmitting unit configured to transmit data to the counterpart equipment; and

a control unit configured to control a transmission band width and a transmission power of a counterpart equipment depending upon said communication quality,

wherein said communication quality is classified into three levels depending upon degree, when said communication quality is in medium level,

wherein said control unit varies the transmission band width in preference to varying the transmission power, and

~~wherein, when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code~~ said control unit comprises:

a reception control arithmetic portion configured to receive a reception signal error ratio and to determine and output a receiver gain;

a reception gain distribution control portion configured to receive the receiver gain output by the reception control arithmetic portion and to determine and output a reception amplifier control signal to an RF amplifier of the receiving unit and a reception clock control signal to a first clock generator of the receiving unit that is used to generate a first pseudo-noise signal;

a transmission control arithmetic portion configured to receive transmission chip rate information and to determine and output a transmission gain; and

a transmission gain distribution control portion configured to receive the transmission gain output by the transmission control arithmetic portion and to determine and output a transmission amplifier control signal to a power amplifying portion of the transmitting unit and a transmission clock control signal to a second clock generator of the transmitting unit that is used to generate a second pseudo-noise signal.

9. – 13. (Canceled).

14. (Currently Amended) A spread spectrum communication method comprising:
receiving, by a receiving unit of an equipment engaged in communications with a counterpart equipment, a communication quality of a communication channel used for the communications between the equipment and the counterpart equipment;

transmitting, by a transmitting unit of the equipment, data to the counterpart equipment; and

controlling a transmission band width and a transmission power of a counterpart equipment depending upon said communication quality,

wherein when said communication quality is degraded below a predetermined level, said control step varies a transmission band to a wider frequency band when a vacant band is present in a wider band than a currently used frequency band,

wherein said control unit varies the transmission band width in preference to varying the transmission power, and

~~wherein, when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code~~ said control unit varies the transmission band width by performing the steps of:

receiving, by a reception control arithmetic portion, a reception signal error ratio and to determine and output a receiver gain;

receiving, by a reception gain distribution control portion, the receiver gain output by the reception control arithmetic portion and determining and outputting a reception amplifier control signal to an RF amplifier of the receiving unit and a reception clock control signal to a first clock generator of the receiving unit that is used to generate a first pseudo-noise signal;

receiving, by a transmission control arithmetic portion, transmission chip rate information and determining and outputting a transmission gain; and

receiving, by a transmission gain distribution control portion, the transmission gain output by the transmission control arithmetic portion and determining and outputting a transmission amplifier control signal to a power amplifying portion of the transmitting unit and a transmission clock control signal to a second clock generator of the transmitting unit that is used to generate a second pseudo-noise signal.

15. (Currently Amended) A spread spectrum communication method comprising:
receiving, by receiving unit of an equipment engaged in communications with a counterpart equipment, a communication quality of a communication channel used for the communications between the equipment and the counterpart equipment;

transmitting, by a transmitting unit of the equipment, data to the counterpart equipment; and

controlling a transmission band width and a transmission power of a counterpart equipment depending upon said communication quality,

wherein when said communication quality is degraded below a predetermined level, said control step increases a transmission power when a vacant band is not present in a wider band than a currently used frequency band,

wherein said control step varies the transmission band width in preference to varying the transmission power, and

~~wherein, when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code~~ said control unit varies the transmission band width by performing the steps of:

receiving, by a reception control arithmetic portion, a reception signal error ratio and to determine and output a receiver gain;

receiving, by a reception gain distribution control portion, the receiver gain output by the reception control arithmetic portion and determining and outputting a reception amplifier control signal to an RF amplifier of the receiving unit and a reception clock control signal to a first clock generator of the receiving unit that is used to generate a first pseudo-noise signal;

receiving, by a transmission control arithmetic portion, transmission chip rate information and determining and outputting a transmission gain; and

receiving, by a transmission gain distribution control portion, the transmission gain output by the transmission control arithmetic portion and determining and outputting a transmission amplifier control signal to a power amplifying portion of the transmitting unit and a transmission clock control signal to a second clock generator of the transmitting unit that is used to generate a second pseudo-noise signal.

16. (Currently Amended) A spread spectrum communication method comprising:
receiving, by a receiving unit of an equipment engaged in communications with a counterpart equipment, a communication quality of a communication channel used for the communications between the equipment and the counterpart equipment;

transmitting, by a transmitting unit of the equipment, data to the counterpart equipment; and

controlling a transmission band width and a transmission power of a counterpart equipment depending upon said communication quality,

wherein when said communication quality is not degraded below a predetermined level and the transmission power is not minimum, the transmission power is lowered, and

~~wherein, when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code~~ said control unit varies the transmission band width by performing the steps of:

receiving, by a reception control arithmetic portion, a reception signal error ratio and to determine and output a receiver gain;

receiving, by a reception gain distribution control portion, the receiver gain output by the reception control arithmetic portion and determining and outputting a reception amplifier control signal to an RF amplifier of the receiving unit and a reception clock control signal to a first clock generator of the receiving unit that is used to generate a first pseudo-noise signal;

receiving, by a transmission control arithmetic portion, transmission chip rate information and determining and outputting a transmission gain; and

receiving, by a transmission gain distribution control portion, the transmission gain output by the transmission control arithmetic portion and determining and outputting a transmission amplifier control signal to a power amplifying portion of the transmitting unit and a transmission clock control signal to a second clock generator of the transmitting unit that is used to generate a second pseudo-noise signal.

17. (Currently Amended) A spread spectrum communication method comprising:
receiving, by a receiving unit of an equipment engaged in communications with a counterpart equipment, a communication quality of a communication channel used for the communications between the equipment and the counterpart equipment;

transmitting, by a transmitting unit of the equipment, data to the counterpart equipment; and

controlling a transmission band width and a transmission power of a counterpart equipment depending upon said communication quality,

wherein when said communication quality is not degraded below a predetermined level and the transmission power is minimum, and when a vacant band is not present in a narrower band than a currently used frequency band, the current frequency band and transmission power are maintained,

wherein said control step varies the transmission band width in preference to varying the transmission power, and

~~wherein, when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code~~ said control unit varies the transmission band width by performing the steps of:

receiving, by a reception control arithmetic portion, a reception signal error ratio and to determine and output a receiver gain;

receiving, by a reception gain distribution control portion, the receiver gain output by the reception control arithmetic portion and determining and outputting a reception amplifier control signal to an RF amplifier of the receiving unit and a reception clock control signal to a first clock generator of the receiving unit that is used to generate a first pseudo-noise signal;

receiving, by a transmission control arithmetic portion, transmission chip rate information and determining and outputting a transmission gain; and

receiving, by a transmission gain distribution control portion, the transmission gain output by the transmission control arithmetic portion and determining and outputting a transmission amplifier control signal to a power amplifying portion of the transmitting unit and a transmission clock control signal to a second clock generator of the transmitting unit that is used to generate a second pseudo-noise signal.

18. (Currently Amended) A spread spectrum communication method comprising:
receiving, by a receiving unit of an equipment engaged in communications with a counterpart equipment, a communication quality of a communication channel used for the communications between the equipment and the counterpart equipment;

transmitting, by a transmitting unit of the equipment, data to the counterpart equipment; and

controlling a transmission band width and a transmission power of a counterpart equipment depending upon said communication quality,

wherein when said communication quality is not degraded below a predetermined level and the transmission power is minimum, and when a vacant band is present in a narrower band than a currently used frequency band, the frequency band is varied to narrower band,

~~wherein, when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code~~ said control unit varies the transmission band width by performing the steps of:

receiving, by a reception control arithmetic portion, a reception signal error ratio and to determine and output a receiver gain;

receiving, by a reception gain distribution control portion, the receiver gain output by the reception control arithmetic portion and determining and outputting a reception amplifier control signal to an RF amplifier of the receiving unit and a reception clock control signal to a first clock generator of the receiving unit that is used to generate a first pseudo-noise signal;

receiving, by a transmission control arithmetic portion, transmission chip rate information and determining and outputting a transmission gain; and

receiving, by a transmission gain distribution control portion, the transmission gain output by the transmission control arithmetic portion and determining and outputting a transmission amplifier control signal to a power amplifying portion of the transmitting unit and a transmission clock control signal to a second clock generator of the transmitting unit that is used to generate a second pseudo-noise signal.

19. (Currently Amended) A spread spectrum communication method comprising:
receiving, by a receiving unit of an equipment engaged in communications with a counterpart equipment, a communication quality of a communication channel used for the communications between the equipment and the counterpart equipment;

transmitting, by a transmitting unit of the equipment, data to the counterpart equipment; and

controlling a transmission band width and a transmission power of a counterpart equipment depending upon said communication quality,

wherein said communication quality is classified into three levels depending upon degree, when said communication quality is in medium level, said control step maintains current frequency band and transmission power, and

wherein said control step varies the transmission band width in preference to varying the transmission power,

~~wherein, when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code~~ said control unit varies the transmission band width by performing the steps of:

receiving, by a reception control arithmetic portion, a reception signal error ratio and to determine and output a receiver gain;

receiving, by a reception gain distribution control portion, the receiver gain output by the reception control arithmetic portion and determining and outputting a reception amplifier control signal to an RF amplifier of the receiving unit and a reception clock control signal to a first clock generator of the receiving unit that is used to generate a first pseudo-noise signal;

receiving, by a transmission control arithmetic portion, transmission chip rate information and determining and outputting a transmission gain; and

receiving, by a transmission gain distribution control portion, the transmission gain output by the transmission control arithmetic portion and determining and outputting a transmission amplifier control signal to a power amplifying portion of the transmitting unit and a transmission clock control signal to a second clock generator of the transmitting unit that is used to generate a second pseudo-noise signal.

20. – 22. (Canceled).

23. (Currently Amended) A spread spectrum communication system comprising:
a receiving unit configured to receive a communication quality of a communication channel between an equipment and a counterpart equipment;

a transmitting unit configured to transmit data to the counterpart equipment; and

a control unit configured to control a transmission band width and a transmission power of a counterpart equipment depending upon said communication quality,

wherein when said communication quality is degraded below a predetermined level, said control unit varies the transmission band width in preference to varying the transmission power, and

~~wherein, when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code~~
said control unit comprises:

a reception control arithmetic portion configured to receive a reception signal error ratio and to determine and output a receiver gain;

a reception gain distribution control portion configured to receive the receiver gain output by the reception control arithmetic portion and to determine and output a reception amplifier control signal to an RF amplifier of the receiving unit and a reception clock control signal to a first clock generator of the receiving unit that is used to generate a first pseudo-noise signal;

a transmission control arithmetic portion configured to receive transmission chip rate information and to determine and output a transmission gain; and

a transmission gain distribution control portion configured to receive the transmission gain output by the transmission control arithmetic portion and to determine and output a transmission amplifier control signal to a power amplifying portion of the transmitting unit and a transmission clock control signal to a second clock generator of the transmitting unit that is used to generate a second pseudo-noise signal.

24. (Currently Amended) A spread spectrum communication method comprising:
receiving, by a receiving unit of an equipment engaged in communications with a counterpart equipment, a communication quality of a communication channel used for the communications between the equipment and the counterpart equipment;

transmitting, by a transmitting unit of the equipment, data to the counterpart equipment; and

controlling a transmission band width and a transmission power of a counterpart equipment depending upon said communication quality,

wherein when said communication quality is degraded below a predetermined level, said control step varies the transmission band width in preference to varying the transmission power, and

~~wherein, when the transmission band width is varied, a ratio of total bits to error correction bits of an error correction code used in signal transmission between the equipment and the counterpart equipment is changed from a current ratio of total bits to error correction bits, while maintaining a same amount of data output per unit period by the error correction code~~ said control unit varies the transmission band width by performing the steps of:

receiving, by a reception control arithmetic portion, a reception signal error ratio and to determine and output a receiver gain;

receiving, by a reception gain distribution control portion, the receiver gain output by the reception control arithmetic portion and determining and outputting a reception amplifier control signal to an RF amplifier of the receiving unit and a reception clock control signal to a first clock generator of the receiving unit that is used to generate a first pseudo-noise signal;

receiving, by a transmission control arithmetic portion, transmission chip rate information and determining and outputting a transmission gain; and

receiving, by a transmission gain distribution control portion, the transmission gain output by the transmission control arithmetic portion and determining and outputting a

transmission amplifier control signal to a power amplifying portion of the transmitting unit and a transmission clock control signal to a second clock generator of the transmitting unit that is used to generate a second pseudo-noise signal.

25. - 35. (Canceled)

36. (New) A spread spectrum system as set forth in claim 5, wherein the transmission control arithmetic portion also receives transmission command information output by the counterpart equipment, and wherein the transmission gain is determined based on both the transmission chip rate information and the transmission command information.

37. (New) A spread spectrum system as set forth in claim 7, wherein the transmission control arithmetic portion also receives transmission command information output by the counterpart equipment, and wherein the transmission gain is determined based on both the transmission chip rate information and the transmission command information.

38. (New) A spread spectrum system as set forth in claim 8, wherein the transmission control arithmetic portion also receives transmission command information output by the counterpart equipment, and wherein the transmission gain is determined based on both the transmission chip rate information and the transmission command information.

39. (New) A spread spectrum method as set forth in claim 14, further comprising the step of:

receiving, by the transmission control arithmetic portion, transmission command information output by the counterpart equipment, and wherein the transmission gain is determined based on both the transmission chip rate information and the transmission command information.

40. (New) A spread spectrum method as set forth in claim 15, further comprising the step of:

receiving, by the transmission control arithmetic portion, transmission command information output by the counterpart equipment, and wherein the transmission gain is

determined based on both the transmission chip rate information and the transmission command information.

41. (New) A spread spectrum method as set forth in claim 16, further comprising the step of:

receiving, by the transmission control arithmetic portion, transmission command information output by the counterpart equipment, and wherein the transmission gain is determined based on both the transmission chip rate information and the transmission command information.

42. (New) A spread spectrum method as set forth in claim 17, further comprising the step of:

receiving, by the transmission control arithmetic portion, transmission command information output by the counterpart equipment, and wherein the transmission gain is determined based on both the transmission chip rate information and the transmission command information.

43. (New) A spread spectrum method as set forth in claim 18, further comprising the step of:

receiving, by the transmission control arithmetic portion, transmission command information output by the counterpart equipment, and wherein the transmission gain is determined based on both the transmission chip rate information and the transmission command information.

44. (New) A spread spectrum method as set forth in claim 19, further comprising the step of:

receiving, by the transmission control arithmetic portion, transmission command information output by the counterpart equipment, and wherein the transmission gain is determined based on both the transmission chip rate information and the transmission command information.